REMARKS

In view of the above amendments and following remarks, reconsideration of the rejections contained in the final Office Action of May 3, 2006, and entry of the above amendments, is respectfully requested.

In the Office Action, the Examiner rejected claims 16, 23 and 41 as being unpatentable over Oguri et al., U.S. 6,409,576 (Oguri) in view of Laursen et al., U.S. 6,555,466 (Laursen) and Lehman et al., U.S. 6,621,264 (Lehman). The same claims were rejected over the same references in section 3 beginning on page 4 of the Office Action, and in further view of Melvin et al., U.S. 6,984,168 (Melvin). Claims 18, 20, 25 and 27 were further rejected as being unpatentable over Oguri, Laursen and Lehman, with or without Melvin, and in further view of Hara et al., U.S. 6,451,696 (Hara). Further, claims 16, 23 and 41 were also rejected as being unpatentable over Shinozuka et al., U.S. 6,315,858 (Shinozuka), in view of Nishimura et al., U.S. 6,332,835 (Nishimura) and Laursen and Lehman. Further, claims 16, 23 and 41 were rejected as being unpatentable over Shinozuka, Nishimura, Laursen, Lehman and Melvin. Further, claims 18, 20, 25 and 27 were rejected as being unpatentable over Shinozuka, Nishimura, Laursen and Lehman, with or without Melvin, and in further view of Hara. However, by the above amendments, all of the claims pending in the present application clearly distinguish over all of the references cited by the Examiner.

In the present invention, as has been discussed in the prior response, use is made of both a so-called in-situ monitor, a monitor disposed within the polishing table, and an in-line monitor, a dried condition film thickness measuring device, when a plurality of layers are polished using a plurality of processes. The accuracy of the in-situ monitor is compensated by the in-line monitor, as was previously explained.

Each of the claims recites a method in which a substrate having a first metal layer and a second metal layer formed under the first metal layer has the first metal layer polished, and has the polishing end point of the first metal layer detected during the polishing process using the end point monitor disposed within the polishing table in the polishing section of the apparatus.

In addition, as for example discussed beginning at line 19 of page 7, during polishing, the polishing can be firstly carried out with a larger load, and then with a small load. Note also the

discussion beginning at line 21 of page 20 of the specification, in which the first polishing process is discussed. In the discussion continuing to line 5 of page 21, it can be seen that a specific example of how, during the first polishing process, a larger top ring pressing force is first employed, and in the second polishing process for the first metal layer, a smaller top ring pressing force is employed.

By lowering the load on the substrate during the second polishing process, the polishing speed or polishing amount is decreased. This contributes to the enhancement of the accuracy of sensing or detecting the polishing end point of the first metal layer with the in-situ sensor. As has been previously discussed, the in-situ sensor is less accurate than that of the in-line sensor. However, the performance of the in-situ sensor can effectively be improved by the lowering of the load on the substrate at the second polishing process of the first metal layer.

Accordingly, each of the independent claims has now been proposed to be amended to recite that the polishing of the first metal layer comprises a first polishing process and a second polishing process, with a load on the substrate during the second polishing process being lower than the load during the first polishing process. Each of the independent claims has further been amended to recite that the detection of the polishing end point of the first metal layer is during the second polishing process. Accordingly, each of the independent claims has been amended to reflect the distinct advantage discussed above.

All of the references that have been cited by the Examiner are silent with respect to this feature. It is noted that Hara was cited for the proposition of teaching a polishing method where first etching step has a load of 200 gf/cm^2 and a second etching step with a load of 100 gf/cm^2. The Examiner alleges that Hara teaches optimization of the speed and quality of the polishing process by reduction of the load.

However, Hara is directed to a method for reclaiming a wafer substrate, and polishing solution compositions therefore. The section of Hara referenced by the Examiner is the second example of Hara. This example includes steps of edge film removal, surface film removal, stock polishing, and final polish. The respective loads referred to by the Examiner take place during the stock polishing and the final polish, respectively.

By contrast, the present invention is requiring the polishing of a first metal layer, and this polishing includes the first polishing process and the second polishing process having the respective higher and lower loads for polishing the first metal layer. This is not suggested by Hara. Hara's method of reclaiming a wafer involves a stock polishing step, and a final polishing step. It is not suggestive of using two polishing process during the polishing of a first metal layer with higher and lower loads. In particular, it further does not suggest detecting the polishing end point of the first metal layer during the second one of these polishing processes.

Accordingly, it may be seen that the claims as proposed to be amended above clearly distinguish over all of the references cited by the Examiner. Applicants would like an opportunity to discuss this with the Examiner through a personal interview, if possible. Accordingly, accompanying this response is a Interview Request Form proposing such an interview. Applicants' undersigned representative will contact the Examiner within several weeks for the purpose of setting the appointment for this interview.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicants' undersigned representative.

Respectfully submitted,

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